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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,858	03/22/2001	Zhihong Jin	SP-0840.3 US	7501

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EXAMINER
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DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/21/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/787,858

Applicant(s)

JIN ET AL.

Examiner

Tracy Dove

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5,8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Inventorship***

In view of the papers filed 1/29/03, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(c). The inventorship of this application has been changed by addition of an inventor, Michael Mansuetto.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and PTO PALM data to reflect the inventorship as corrected.

### ***Specification***

This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

### ***Claim Objections***

Claim 14 is objected to because of the following informalities: the phrase "of about 60 microns or less" is confusing. For example, a size of 60.5 microns is "about" 60, but not "less" than 60. Examiner suggests deleting "about" from the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-8 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Swierbut et al., EP 0747982 A1.

Swierbut teaches an electrochemical cell having a zinc anode, a cathode, a separator and an alkaline electrolyte. The cathode includes a manganese dioxide active material and an additive. The additive may be  $\text{Fe}_2\text{O}_3\text{-TiO}_2$  (see abstract and Fig. 1). The electrolyte is preferably formed of potassium hydroxide (col. 2, lines 53-54).

Regarding claim 10, Swierbut teaches the additive is preferably  $\text{SnO}_2$ , but may as well include  $\text{Nb}_2\text{O}_5$  or  $\text{WO}_3$  (see col. 3, lines 27-31).

Thus the claims are anticipated.

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~~Claims 1-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Mansuetto, US 6,524,750.~~

Mansuetto teaches an alkaline battery having a reduced doped titanium oxide (n-type) additive for enhancing performance of the battery. The additive may be contained in the cathode. (col. 3, lines 51-59). Figure 8 shows an alkaline battery having a manganese dioxide cathode, a separator, a potassium hydroxide electrolyte (aqueous) and a zinc anode. The doped titanium oxide compound may be initially contained in the anode, cathode and/or electrolyte (col. 7, lines 48-col. 8, lines 3). The reduced doped titanium oxide has the formula  $\text{Ti}_{1-x}\text{M}_x\text{O}_{2-y}$  wherein M is an element having an octagonal coordination structure, x is from about 0.01-0.5, and y is from about 0.05-0.25. Niobium ( $\text{Nb}_2\text{O}_5$ ; col. 6, lines 12-13) is the preferred element M

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(col. 3, lines 51-col. 4, lines 16). The resistivities of the doped titanium oxide materials are less than 100 ohm-cm, and are preferably about 10 ohm-cm or less (col. 5, lines 42-45). Suitable particle sizes for the titanium dioxide and the dopant are from about 1-5 microns, with particles sizes below 2 microns being preferred (col. 6, lines 5-7). Example 1 teaches reduced n-TiO<sub>2</sub>. Examples 2-4 teaches a 37 wt% aqueous KOH electrolyte. Example 1 teaches that the cathode mix was prepared by blending EMD (manganese dioxide) and synthetic graphite in a 25:1 weight ratio, wherein 1.6 wt% of the EMD was replaced with niobium-doped TiO<sub>2</sub> as a cathode additive. See also Example 3.

Regarding claim 10, Mansuetto teaches that it is known in the art to use SnO<sub>2</sub> and Nb<sub>2</sub>O<sub>5</sub> as an additive for a cathode of an alkaline Zn/MnO<sub>2</sub> cell (col. 1, lines 57-61).

Thus the claims are anticipated.

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Claims 1-3, 5-7 and 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Hilarius et al., US 6,348,259.

Hilarius teaches a manganese dioxide electrode comprising coated or uncoated inorganic particles (abstract). The inorganic particles may have coatings consisting of metal oxide selected from the group consisting of Fe<sub>2</sub>O<sub>3</sub>, NiO, CoO, ZrO<sub>2</sub>, SnO<sub>2</sub>, TiO<sub>2</sub>, Sb<sub>2</sub>O<sub>3</sub>, PbO, Pb<sub>3</sub>O<sub>4</sub>, Bi<sub>2</sub>O<sub>3</sub> and mixtures thereof. A single coating consisting of one substance may be doped with foreign ions, such as, for example, SnO<sub>2</sub> coatings doped with foreign ions (col. 2, lines 45-62). Typical constituents of an alkaline cell are a manganese dioxide cathode, a zinc anode, an alkaline electrolyte and a separator material (col. 1, lines 9-12). Surprisingly good capacity increase are

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achieved by adding particles whose surface coatings are doped with foreign ions, such as, for example, SnO<sub>2</sub> coatings doped with antimony (cation). See col. 4, lines 42-45.

Thus the claims are anticipated.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

March 12, 2003

  
**Patrick Ryan**  
**Supervisory Patent Examiner**  
**Technology Center 1700**